OMG: RTPS TCP/IP PSM for DDS Interoperability

return to the DDS Family of Standards

Table 1: Data sheet for RTPS TCP/IP PSM for DDS Interoperability RFP

Title	TCP/IP Platform-Specific Model (PSM) for the DDS Real-Time Publish Subscribe (RTPS) Protocol
Acronym	RTPS TCP/IP PSM
Version	
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About RFP	https://www.omg.org/techprocess/meetings/schedule/RTPS_TCP-IP_PSM_for_DDS_Interop_RFP.html
Document	https://www.omg.org/cgi-bin/doc?mars/17-09-24.pdf

Note: The following is an excerpt from the actual document. It is provided here as a convenience and is not authoritative. Refer to the original document as the authoritative reference.

Motivation

The Data Distribution Service (DDS) Real-time Publish-Subscribe wire protocol (DDSI-RTPS) specification defines a set of requirements for a wire protocol suitable for the Data Distribution Service (DDS). Primary considerations in the design of the Real-time Publish-Subscribe (RTPS) wire protocol are: performance, configurability (tuning quality-of-service), fault-tolerance (no single points of failure), extensibility (support new transports), plug-and-play connectivity (automatic discovery), modularity, scalability, and type safety.

RTPS imposes very little requirements on the underlying transport: a connectionless service capable of sending packets best-effort is sufficient. A connection-oriented protocol can be used but is not required. The mechanisms of the underlying protocol map to the generalized notions of the RTPS Platform Independent Model (PIM).

The original DDSI-RTPS specification defined a Platform Specific Model (PSM) built upon the udp because of its simplicity, universal availability, best-effort and connectionless capabilities, predictable behavior, scalability, and multicast support.

However, some Data Distribution Service (DDS) systems would benefit from an RTPS PSM built upon the Transmission Control Protocol (TCP). Among other scenarios, a TCP PSM would be better suited for communication through firewalls, where often UDP traffic is filtered; could leverage existing TCP-based load-balancing infrastructure; and would allow DDS to be deployed in some applications where governance mandates TCP exclusively. Therefore, the goal of this Request For Proposal (RFP) is to meet the requirements set forth by the RTPS PIM with minimum

possible overhead using TCP.